What Is Claimed Is:

1. An isolated nucleic acid molecule encoding a Plasmodium sp. chitinase.

2. The isolated nucleic acid molecule of claim 1 wherein said nucleic acid is deoxyribonucleic acid.

3. The isolated nucleic acid molecule of claim 2 wherein said deoxyribonucleic acid is cDNA.

4. The isolated nucleic acid molecule of claim 1 wherein said nucleic acid molecule has a nucleotide sequence as shown in SEQ ID NO:1 or SEQ ID NO:2.

5. The isolated nucleic acid molecule of claim 1 wherein said nucleic acid molecule encodes an amino acid sequence as shown in SEQ ID NO:3 or SEQ ID NO:4.

6. The isolated nucleic acid molecule of claim 1 wherein said nucleic acid is ribonucleic acid.

7. The isolated nucleic acid molecule of claim 6 wherein said ribonucleic acid is mRNA.

8. An oligonucleotide complementary to at least a portion of the mRNA of claim 7.

9. A cell comprising the oligonucleotide of claim 8.

10. An expression vector comprising the oligonucleotide of claim 8.

11. The expression vector of claim 10 wherein the expression vector is selected from the group consisting of a plasmid and a virus.

12. A cell comprising the expression vector of claim 10.

13. A method of decreasing expression of a Plasmodium sp. chitinase in a host cell, said method comprising introducing the oligonucleotide of claim 8 into the cell, wherein said oligonucleotide blocks translation of said mRNA so as to decrease expression of said Plasmodium sp. chitinase in said host cell.

14. A cell comprising the nucleic acid molecule of claim 1.

15. An expression vector comprising the nucleic acid molecule of claim 1.

16. The expression vector of claim 15 wherein said expression vector is selected from the group consisting of a plasmid and a virus.

17. A cell comprising the expression vector of claim 15.

18. A method of increasing expression of Plasmodium sp. chitinase in a host cell, said method comprising:

introducing the nucleic acid molecule of claim 1 into the cell; and

allowing said cell to express said nucleic acid molecule resulting in the production of Plasmodium sp. chitinase in said cell.

19. A method of screening a substance for the ability of the substance to modify Plasmodium sp. chitinase function, said method comprising:

introducing the nucleic acid molecule of claim 1 into a host cell;

expressing said Plasmodium sp. chitinase encoded by said nucleic acid molecule in the host cell;

exposing the cell to a substance; and

evaluating the exposed cell to determine if the substance modifies the function of the Plasmodium sp. chitinase.

20. The method of claim 19 wherein said evaluation comprises monitoring the expression of Plasmodium sp. chitinase.

21. A method of obtaining DNA encoding a Plasmodium sp. chitinase, said method comprising:

selecting a DNA molecule encoding a Plasmodium sp. chitinase, said DNA molecule having a nucleotide sequence as shown in SEQ ID NO:1 or SEQ ID NO:2;

designing an oligonucleotide probe for a Plasmodium sp. chitinase based on the nucleotide sequence of the selected DNA molecule;

probing a genomic or cDNA library of an organism with the oligonucleotide probe; and

obtaining clones from said library that are recognized by said oligonucleotide probe, so as to obtain DNA encoding a Plasmodium sp. chitinase.

22. A method of obtaining DNA encoding a Plasmodium sp. chitinase, said method comprising:

selecting a DNA molecule encoding a Plasmodium sp. chitinase, said DNA molecule having a nucleotide sequence as shown in SEQ ID NO:1 of SEQ ID NO:2;

designing degenerate oligonucleotide primers based on the nucleotide sequence of the selected DNA molecule; and

utilizing said oligonucleotide primers in a polymerase chain reaction on a DNA sample to identify homologous DNA encoding a Plasmodium sp. chitinase in said sample.

23. An isolated nucleic acid molecule encoding a Plasmodium sp. chitinase, said nucleic acid molecule encoding a first amino acid sequence having at least 90% amino acid identity to a second amino acid sequence, said second amino acid sequence as shown in SEQ ID NO:3 or SEQ ID NO:4.

24. A DNA oligomer capable of hybridizing to the nucleic acid molecule of claim 1.

25. A method of detecting presence of a Plasmodium sp. chitinase in a sample, said method comprising:

contacting a sample with the DNA oligomer of claim 24, wherein said DNA oligomer hybridizes to any of said Plasmodium sp. chitinase present in said sample, forming a complex therewith; and

detecting said complex, thereby detecting presence of a Plasmodium sp. chitinase in said sample.

26. The method of claim 25 wherein said DNA oligomer is labeled with a detectable marker.

27. An isolated Plasmodium sp. chitinase.

28. The Plasmodium sp. chitinase of claim 27 wherein said Plasmodium sp. chitinase is encoded by a nucleotide sequence as shown in SEQ ID NO:1 or SEQ ID NO:2.

29. The Plasmodium sp. chitinase of claim 27 wherein said Plasmodium sp. chitinase is encoded by an amino acid sequence as shown in SEQ ID NO:3 or SEQ ID NO:4.

30. An isolated Plasmodium sp. chitinase encoded by a first amino acid sequence having at least 90% amino acid identity to a second amino acid sequence, said second amino acid sequence as shown in SEQ ID NO:3 or SEQ ID NO:4.

31. An antibody or fragment thereof specific for the Plasmodium sp. chitinase of claim 30.

32. The antibody of claim 31 wherein said antibody comprises a monoclonal antibody.

33. The antibody of claim 31 wherein said antibody comprises a polyclonal antibody.

34. A method of detecting presence of a Plasmodium sp. chitinase in a sample, said method comprising:

contacting a sample with the antibody or fragment thereof of claim 31, wherein said antibody or fragment thereof binds to any of said Plasmodium sp. chitinase present in said sample, forming a complex therewith; and

detecting said complex, thereby detecting presence of a Plasmodium sp. chitinase in said sample.

35. The method of claim 34 wherein said antibody or fragment thereof is labeled with a detectable marker.

36. A method of producing an antibody specific for a Plasmodium sp. chitinase in a host, the method comprising:

selecting the isolated Plasmodium sp. chitinase of claim 27 or an antigenic portion thereof; and

introducing the selected Plasmodium sp. chitinase or antigenic portion thereof into a host to induce production of an antibody specific for Plasmodium sp. chitinase in the host.

37. A composition comprising the Plasmodium sp. chitinase of claim 27 or an antigenic portion thereof and a compatible carrier.

38. A method of preventing transmission of malaria by a mosquito feeding on a subject that may harbor Plasmodium sp. organisms, the method comprising administering to the subject an amount of the composition of claim 37 effective to induce production of an antibody specific for Plasmodium sp. chitinase in the subject, wherein the antibody inhibits Plasmodium sp. chitinase and is transferred to a mosquito feeding on the subject thereby preventing infection of the mosquito by Plasmodium sp. organisms that may be harbored in the subject.

39. A method of screening a substance for the ability of the substance to modify Plasmodium sp. chitinase function, the method comprising:

exposing the isolated Plasmodium sp. chitinase of claim 27 to a substance; and

evaluating the exposed chitinase to determine if the substance modifies the function of the Plasmodium sp. chitinase.

40. A method of preventing infection of mosquitoes by Plasmodium sp., the method comprising exposing the Plasmodium sp. to an amount of a compound effective to interfere with function of Plasmodium sp. chitinase, thereby preventing infection of the mosquitoes by the Plasmodium sp.

41. The method of claim 40 wherein the compound interferes with function of Plasmodium sp. chitinase by reducing Plasmodium sp. chitinase gene expression.

42. The method of claim 41 wherein the compound is an oligonucleotide targeted to the Plasmodium sp. chitinase gene.

43. The method of claim 40 wherein the compound interferes with function of the Plasmodium sp. chitinase by inhibiting the function of Plasmodium sp. chitinase.

44. A method of preventing transmission of malaria by a mosquito feeding on a subject that may harbor Plasmodium sp. organisms, the method comprising administering to the subject an amount of a compound effective to interfere with function of Plasmodium sp. chitinase in the subject, wherein the compound is transferred to a mosquito feeding on the subject thereby preventing infection of the mosquito by Plasmodium sp. organisms that may be harbored in the subject.

45. A method of preventing transmission of malaria by a mosquito that ingests Plasmodium sp. organisms, the method comprising introducing into the mosquito an amount of a compound effective to interfere with function of Plasmodium sp. chitinase thereby preventing infection of the mosquito by ingested Plasmodium sp. organisms.